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SUBJECT: Nuclear Power at Ontario's Energy Strategy Core

REF: (A) Toronto 53 (B) Toronto 109 (C) 08 Toronto 369

Sensitive But Unclassified -- Please Protect Accordingly.

1. (U) Summary: Nuclear power remains at the center of Ontario's energy strategy, despite the recent cancellation of three nuclear power plant projects, and the passing of Ontario's much publicized Green Energy Act (GEA). The steady supply of power from existing nuclear plants, combined with dramatically lower provincial demand for electricity, will mitigate any potential shortfall in electricity exports from Ontario to the United States. End Summary.

Decreased Electricity Demand

2. (U) Ontario's maximum generation capacity is around 30,000 MW, but the province's current capacity has been curtailed to match decreased demand. Demand from struggling energy-intensive industries such as manufacturing, which account for roughly 30% of provincial consumption, has decreased. The drop in demand, coupled with higher levels of precipitation (resulting in more hydroelectric power) and lower than usual summer temperatures (July 2009 was the second coldest July in 40 years), have contributed to declining electricity demand in Ontario. Peak demand in Ontario topped 20,000 MW for only one hour in July 2009. Wholesale consumption was down 23% for the first six months of 2009, compared with the same period last year. Electricity consumption by the steel industry was down 36%, pulp and paper - down 24%, mining - down 20%, and automotive was down 5%. Energy demand is expected to decline by 5.5% in 2009 compared with 2008, before increasing slightly by 0.2% in 2010.

3. (U) Roughly 50% of Ontario's electricity supply comes from nuclear power, while the remainder comes from hydroelectric (21%), coal-fired generators (18%), gas-fired stations (8%), and a very small percentage from other sources. Before the current economic downturn, the Ontario Power Authority (OPA) estimated that if no new facilities were built to replace retiring facilities, a 25,000 megawatt (MW) gap between supply and demand would have been created by 2025.

Cancelled Nuclear Projects, Coal Plant Closures

4. (U) Ontario announced in June 2009 that it would indefinitely postpone plans to build a new nuclear power reactor at its Darlington Nuclear Generating Station located 40 miles east of Toronto, citing higher-than-anticipated costs and uncertainty about the future of the bid winner, GOC-owned Atomic Energy of Canada Ltd (AECL). The GOC is considering privatizing AECL, but has not made a final decision.

5. (SBU) Separately, Bruce Power announced in July 2009 that it would withdraw its application to construct two new nuclear power plants in the Province. Bruce Power is owned by a Canadian

consortium that operates the Bruce nuclear complex, which is leased from provincially-owned Ontario Power Generation (OPG). One plant was planned at its existing Bruce Nuclear facility, and the other at Nanticoke in southwestern Ontario, home to North America's largest coal-fired plant, also owned by OPG, which is scheduled to close in 2014. On September 3, OPG announced it would close two of eight units at Nanticoke, and two of four units at its Lambton plant near Sarnia, Ontario four years ahead of schedule in 2010. (Comment: While Ontario Energy and Infrastructure Minister George Smitherman cast this acceleration in "Green" terms, it no doubt comes as a result of slackening demand. End Comment.)

Refurbished Nuclear Supply

16. (U) Rather than build the two new nuclear plants, Bruce Nuclear will focus on refurbishing its existing Bruce A and B plants on Lake Huron. Current output, with 6 of its 8 reactors on line is 4,800 MW, making Bruce Nuclear the largest nuclear facility in North America, in terms of output. With all 8 reactors on line, its capacity will reach 6,300 MW, second largest in the world in terms of capacity, after Kashiwazaki-Kariwa in Japan. Refurbishment of Bruce A Units 1 and 2 are on schedule for completion in early 2010. Refurbishment of Bruce A Units 3 and 4 will follow the restart of reactors 1 and 2.

17. (SBU) Comment: Roughly 50% of Ontario's energy supply will come from nuclear power into the foreseeable future. With decreased

demand, increased conservation, and new electricity supply, Ontario is expected to have excess energy available for export to the United States in the near-term. At any given time, the province has been able to export (or import) roughly 4,000 MW of supply through its transmission lines. Concerns about a potential shortage of power seem less pressing now than a few years ago. While the Province's Green Energy Act will bring more non-nuclear power online, the shut-down of coal-fired plants will mean that nuclear's overall contribution to Ontario's total supply will remain largely the same.

With the recession-driven drop in demand for electricity, even a potential loss of three nuclear plants should not dramatically impact Ontario's electricity exports to the United States.

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